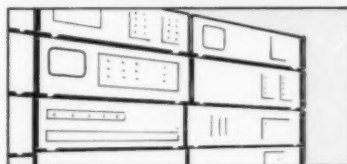


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ATE



News and analysis

- ☐ ATE tower of Babel under siege by DOD (Aug, 35)
- ☐ Manufacturers wrestle with MATE requirements (Aug, 47)
- ☐ Automation comes to YIG filter testing (Aug, 51)

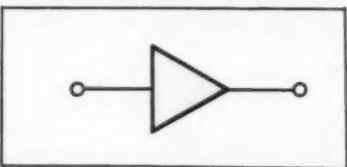
Design and applications

- ☐ Automatic setup tests mixers fast (Jan, 73)
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- ☐ ATE probe allows on-wafer MMIC tests (Mar, 93)
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Product technology

- ☐ Complete test station is transportable (Jan, 229)
- ☐ Software system analyzes devices (Sep, 192)
- ☐ Test EMI automatically with analyzer software (Nov, 206)

Amplifiers and oscillators



Design and applications

- ☐ Dig for the roots of oscillator noise (Apr, 65)

- ☐ Use internal feedback to drop amplifier VSWR (Apr, 71)
- ☐ A 180-MHz synthesizer from a \$10 CMOS chip (Apr, 75)
- ☐ Power devices drive tunable oscillators (May, 179)
- ☐ Wideband DMOS amplifier competes with bipolars (Jun, 113)
- ☐ Matching technique yields optimum LNA performance (Feb, 87)
- ☐ Use YTHGs for better frequency accuracy (Jul, 107)
- ☐ Preamps and YTOs cut ELINT noise (Sep, 121)
- ☐ Room light: The gremlin clouding amplifier tests (Oct, 75)
- ☐ CAD software optimizes DRO embedding network (Oct, 79)
- ☐ Signal source specs hold key to receiver tests (Nov, 129)

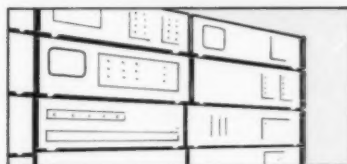
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- ☐ SAW subsystem analyzes LF spectrum (Mar, 177)
- ☐ Speedy VCO tunes 8 to 12 GHz (Aug, 121)
- ☐ Operational amp buffers 165 MHz (Jan, 149)
- ☐ High-speed opamp has wide bandwidth (Mar, 177)
- ☐ Cubic YIG components save time and space (Apr, 115)
- ☐ Atomic oscillator fits in your palm (Apr, 127)
- ☐ Kilowatt amplifier spans 30 to 150 MHz (Apr, 133)
- ☐ Oscillator offers reference retrofit (Apr, 145)
- ☐ Amp modules boast wide dynamic range (Apr, 146)
- ☐ Monolithic logamp challenges hybrids (May, 203)
- ☐ SAW oscillator serves optic links (May, 227)
- ☐ High-speed logamp surveys 2 to 6 GHz (Jul, 135)
- ☐ PLL stabilizes DRO sources (Jul, 139)
- ☐ Front-end lineup fits in flatpacks (Aug, 127)
- ☐ High-gain amplifier powers 6 to 18 GHz (Sep, 197)
- ☐ Microprocessor governs cesium frequency standard (Oct, 131)
- ☐ Track-and-hold amp switches in 10 ns (Oct, 214)
- ☐ VCO tunes 1 to 2 GHz with +13 dBm (Oct, 215)
- ☐ Thin-film GaAs FETs amplify 2 to 18 GHz (Nov, 150)

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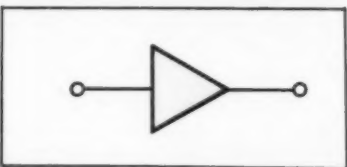
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- ☐ VCO tunes 1 to 2 GHz with +13 dBm (Oct, 215)
- ☐ Thin-film GaAs FETs amplify 2 to 18 GHz (Nov, 150)

- ☐ Wide-range DLVAs recover quickly (Nov, 173)
- ☐ Tiny signal sources sweep 1 to 18 GHz (Nov, 183)
- ☐ Clock oscillator coherent with triggers (Nov, 187)
- ☐ Operate a linear 1-to-2-GHz VCO (Nov, 206)
- ☐ Accelerated recovery time for DLVAs (Feb, 172)
- ☐ A collection of amplifier applications (May, 263)
- ☐ Proper installation of TO-8 oscillators (Jun, 234)
- ☐ Make full use of quartz crystals and oscillators (Sep, 233)
- ☐ Power amplifier leads MMIC line (Dec, 125)
- ☐ Wide-range logamps scale 0.4 to 2.0 GHz (Dec, 167)
- ☐ Compact atomic source has high stability (Dec, 160)

Antennas



News and analysis

- ☐ Robotic arms fashion phased arrays (Jul, 47)

Design and applications

- ☐ Measure antenna surface with microwave holograms (Feb, 95)
- ☐ Testing technique checks line / antenna absorption (Feb, 115)
- ☐ Refractivity studies verify ray-trace model (Mar, 129)
- ☐ Improve antenna design using 19th-century math (May, 167)
- ☐ Program computes gain of standard antennas (May, 193)
- ☐ Invisible antenna takes up less space

(Jun, 93)

- ☐ H-guide slot antenna shrinks sidelobes (Jun, 107)
- ☐ Novel planar balun feeds octave-bandwidth dipole (Aug, 91)
- ☐ Common components ease phased-array analysis (Aug, 95)
- ☐ Low-profile antenna improves DF accuracy (Aug, 109)
- ☐ Digital tools speed up shipboard antenna tests (Sep, 145)

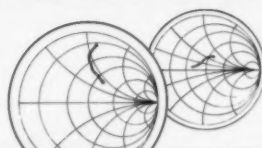
Business topics



News and analysis

- ☐ FCC forks up dish zoning preemption (Jan, 51)
- ☐ COMPACT's new owners promise solid future (Jan, 55)
- ☐ Will SAW sales soar to \$1 billion? (Feb, 51)
- ☐ SAW technology slices into a new market (Feb, 51)
- ☐ Easing the radio wars (Mar, 35)
- ☐ FY'87 federal budget seeks shelter for R&D (Apr, 35)
- ☐ DESC broadens scope of component testing (May, 43)
- ☐ Polytechnic christens Weber research center (May, 51)
- ☐ Putting MMICs into systems: The view from Raytheon (Jun, 41)
- ☐ Will subcontractors pass the 22-cent challenge? (Jul, 35)
- ☐ MIMIC "roadmap" released by DOD (Sep, 35)
- ☐ Economic pressures shape spectrum analyzer market (May, 98)
- ☐ Defense cuts won't topple microwave business (Oct, 34)
- ☐ Accessing Japan's technical literature (Oct, 59)
- ☐ A year of hide and seek (Dec, 35)
- ☐ 1986: The year in review (Dec, 40)

Computer-aided design



Design and applications

- ☐ CAD does coupling loops for tunable cavities (Oct, 137)
- ☐ Hone filter bandwidth with computer ease (Jan, 87)
- ☐ Spreadsheet software fills in cavity specs (Feb, 120)
- ☐ Calculator analyzes microwave networks (Apr, 93)
- ☐ Program eases selection of SAW matching circuits (Jun, 123)
- ☐ Double-stub tuning made easy by HP-41 (Jul, 113)
- ☐ Program helps minimize subsystem mismatches (Sep, 149)
- ☐ CAD program designs stripline couplers (Dec, 91)

Product technology

- ☐ MS-DOS program speeds up design (Nov, 188)
- ☐ CAD synthesizes transmission lines (Nov, 188)
- ☐ Amp program designs matching networks (Oct, 215)
- ☐ Peripheral turns PC into analyzer (Oct, 215)
- ☐ PC software complements vector network analyzers (Nov, 159)
- ☐ Analog design software runs on PCs (Mar, 177)
- ☐ RF design tools run on IBM PC, compatibles (May, 227)
- ☐ Workstations incorporate Touchstone (Jun, 195)
- ☐ CAD package runs on IBM, Apple (Jun, 195)
- ☐ Analyze, synthesize transmission lines on PC (Jul, 145)
- ☐ COMPACT extends software capability (Sep, 203)
- ☐ Software helps design, analyze filters (Sep, 204)
- ☐ EEs enhance E-syn program (Sep, 204)

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ADMIT ONE

News and analysis

- ☐ Sources, fabrication highlight mm-wave show (Jan, 43)
- ☐ Computers control spotlight at 26th ARFTG (Mar, 45)
- ☐ Workable hardware is focus of Radar '86 (Apr, 45)
- ☐ GaAs takes its share of conference topics (Apr, 49)
- ☐ ARFTG mavens ponder pulsed power analysis (Aug, 55)
- ☐ VTC'86 tunes up vehicular technology (Aug, 61)
- ☐ GaAs IC Symposium accents "productization" (Oct, 49)
- ☐ Satcom, adaptive arrays dominate Montech '86 (Nov, 49)

EMI/RFI/EMC



News and analysis

- ☐ The big squeeze is on interference control (May, 94)
- ☐ Northrop completes colossal chamber (Apr, 53)

- ☐ NSF workshop on EM readies its report (May, 35)
- ☐ Radiation protection, in small to extra-large (Jul, 41)

Design and applications

- ☐ Stay EMI-calm on a noise-free island (Oct, 101)

Product technology

- ☐ Low-cost probe tracks down EMI (Feb, 155)
- ☐ Weighing the options on EMI shielding windows (Feb, 174)
- ☐ Guarding against EMP (Aug, 151)

Education



News and analysis

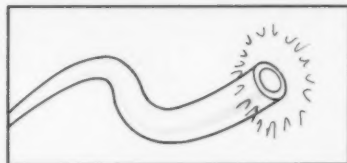
- ☐ The 1986 career survey: A *Microwaves & RF* special report (Sep, 36)
- ☐ Being an entrepreneur: The problems, the fun (Jan, 135)
- ☐ Stepping up to management (Feb, 135)
- ☐ How's your grasp of design basics? (Mar, 193)
- ☐ Educating for today, not for tomorrow (Apr, 167)
- ☐ American managers and the Japanese paradox (Jun, 201)
- ☐ Sometimes enough is too much (Aug, 139)
- ☐ Resumes for engineers (Sep, 171)

- ☐ Satellites contribute to continuing education (May, 235)
- ☐ We must lead engineers toward manufacturing (May, 73)

Product technology

- ☐ Videotapes at the lectern (Jul, 127)

Fiber optics



News and analysis

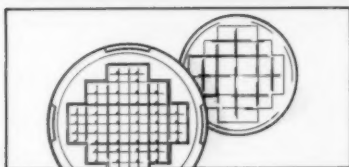
- ☐ Coherent detection: Where light meets radio (Feb, 34)
- ☐ Reinhard Knerr answers 13 questions on lightwaves (Feb, 41)
- ☐ Fiber optics takes hold for analog applications (Feb, 47)
- ☐ British labs promote fiber for phased arrays (Apr, 39)

Product technology

- ☐ Troubleshooting a fiber-optic line (Nov, 207)
- ☐ Linking LANs with light (Jan, 241)
- ☐ Track optical-fiber technology (Apr, 181)
- ☐ Checking optical fiber strength and lifetime (Aug, 151)
- ☐ Test chromatic dispersion in optical cable (Sep, 232)
- ☐ Arc fusion splices single-, multimode fibers (Sep, 233)
- ☐ Case study: Testing fiber-optic LAN systems (Sep, 234)

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ICs and MMICs



News and analysis

- ☐ You bring the specs, they make the wafer (Jun, 83)
- ☐ GaAs MMICs poised for production (Mar, 65)
- ☐ Westinghouse wins USAF GaAs award (Mar, 72)
- ☐ IC vendors regroup after a slow start (Mar, 75)
- ☐ Digital GaAs ICs end their adolescence (May, 108)
- ☐ 7000 MMICs per week (Mar, 121)

Design and applications

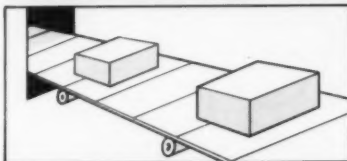
- ☐ Annealing method aids IC uniformity (Mar, 103)
- ☐ NMOS MUX IC matches GaAs (Mar, 109)
- ☐ Low-cost MMICs replace hybrids (Mar, 115)
- ☐ Putting foundries to the test (Jun, 84)

Product technology

- ☐ Entire subsystem fits on a chip (Jan, 151)
- ☐ GaAs MMIC amplifiers address EW applications (Jan, 219)
- ☐ DC-to-2.5-GHz MMIC amp focuses on fiber optics (Feb, 123)
- ☐ GaAs MMICs switch to 2 GHz in 3 ns (Feb, 155)
- ☐ MMIC GaAs FET amplifier gains on hybrids (Mar, 167)
- ☐ High-speed counters head GaAs line (Mar, 177)
- ☐ GaAs MMIC switch controls DC to 18 GHz (Jun, 195)

- ☐ GaAs MMIC sources span 3.0 to 6.5 GHz (Jul, 145)
- ☐ GaAs IC accepts 2.5-Gb/s data streams (Jul, 145)
- ☐ Array combines digital, analog functions (Jul, 145)
- ☐ MMIC chip amplifier boosts 0.5 to 5.0 GHz (Sep, 157)
- ☐ 19-GHz MMIC amp chips in with 5-dB gain (Sep, 203)
- ☐ Digital GaAs IC divides 0.8 to 4.2 GHz (Sep, 205)
- ☐ Silicon MMICs downconvert 10 GHz (Nov, 177)
- ☐ Monolithic amp spans DC to 1 GHz (Nov, 188)
- ☐ Interfacing with GaAs digital ICs (Apr, 183)
- ☐ GaAs ICs: A guide for the connoisseur (Dec, 135)
- ☐ GaAs MMIC line controls 1 to 10 GHz (Dec, 153)
- ☐ GaAs IC serves optical systems (Dec, 158)

Manufacturing and production



News and analysis

- ☐ Digital demands drive MW design (Jun, 67)
- ☐ Some may not embrace surface-mount mania (May, 76)
- ☐ Faster processing, faster production (May, 102)
- ☐ British firms hunt low-cost MIC

packages (Oct, 41)

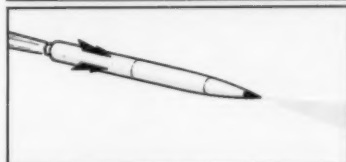
Design and applications

- ☐ Microwaves measure complex permittivity (Mar, 147)
- ☐ Advanced packaging uses modular design (Jun, 67)
- ☐ User queries cue substrate efforts (Jun, 75)
- ☐ Matrix transform cuts N-port design chores (Apr, 83)
- ☐ Microslab: Waveguide medium for the future (Sep, 83)

Product technology

- ☐ SSMIC method molds 18-GHz quintuplexer (May, 223)
- ☐ Surface-mount pack houses GaAs MMICs (Jun, 157)
- ☐ Sputtering system processes Si wafers (Jun, 195)
- ☐ Surface-mount packs house MIC amplifiers (Sep, 163)
- ☐ Heat exchanger method breeds Si crystals (Mar, 212)
- ☐ The right recipe for microwave circuit boards (Mar, 212)
- ☐ Better GaAs materials (Jul, 166)
- ☐ Probing a planar microwave component package (Jul, 167)
- ☐ Optimizing loss factors in microwave substrates (Sep, 233)

Millimeter waves



News and analysis

- ☐ Ku-band systems on wheels (Mar, 41)
- ☐ MM-wave technology continues to

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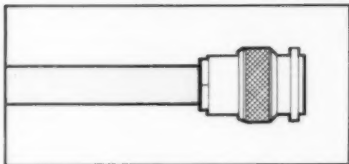
evolve (May, 84)

Design and applications

- ☐ 230-GHz cosmic receiver: Keeping down the noise (Sep, 91)
- ☐ Lenses can upgrade millimeter-wave receivers (Sep, 103)
- ☐ Bringing surveillance to millimeter-waves (Sep, 111)
- ☐ Here today: Ka-band munition transceivers (Sep, 79)

Product technology

- ☐ SIS mixers drop mm-wave noise floor (Mar, 171)



News and analysis

- ☐ Of vanishing filters and wishful thinking (May, 219)
- ☐ Keeping account of connector standards (Nov, 70)
- ☐ Fear of lightwaves proves shortsighted (Nov, 81)
- ☐ More challenges ahead for connector design (Nov, 87)
- ☐ MM-wave connectors push into Q-band (Nov, 99)
- ☐ A practitioner's guide to connector consciousness (Nov, 105)

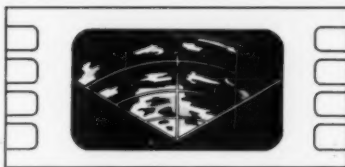
Design and applications

- ☐ Predict PIN-diode switch distortion (Jan, 111)
- ☐ Filter model aids window design (Feb, 109)
- ☐ Wideband switch matrix cuts ATE station costs (Apr, 111)
- ☐ Refresh your thinking about microwave cable (Jul, 71)
- ☐ An inside look at double-ridge guide (Jul, 77)
- ☐ A tunable solution to group delay (Jul, 80)
- ☐ Simplifying the specs of PIN-diode switches (Jul, 83)
- ☐ Dual-mode circulators lock on oscillators (Sep, 95)

Product technology

- ☐ Team effort yields 50-GHz connectors (Apr, 131)
- ☐ High-speed switches enlist GaAs MMICs (Apr, 147)
- ☐ Cable bender shapes coax automatically (Apr, 147)
- ☐ Trimmer capacitors seal out contaminants (Jun, 189)
- ☐ Stripline coupler directs 2 to 40 GHz (Jul, 119)
- ☐ Coaxial SPDT switch controls DC to 40 GHz (Oct, 139)
- ☐ IC connector assembly aids serviceability (Oct, 143)
- ☐ Calculate ferrite specifications (Feb, 175)
- ☐ Extend test cable life (Mar, 213)
- ☐ Tuning and matching test impedances (May, 264)
- ☐ Understanding mm-wave connectors and waveguide (May, 264)
- ☐ The basics of PIN-diode switch design (Jun, 235)
- ☐ Broadband bias tees for high-speed systems (Jun, 237)

- ☐ Fabricating low-loss optical waveguide (Jun, 237)
- ☐ Specify SAW transversal bandpass filters (Aug, 150)
- ☐ Handbook serves as capacitor design guide (Aug, 150)
- ☐ How to use miniature chip capacitors (Sep, 232)
- ☐ Coaxial bias tee carries 2 to 18 GHz (Dec, 163)



News and analysis

- ☐ Turbulent times for NEXRAD (Jan, 34)

Design and applications

- ☐ Phase correlator reduces millimeter-wave radar cost (Mar, 125)
- ☐ AGC handles transients of pulsed radar signals (May, 183)
- ☐ Rain backscatter tests dispel old theories (Jun, 97)
- ☐ 3-MW wideband klystron powers agile radars (Jan, 225)
- ☐ Understanding the limits of quadrature detection (Dec, 67)

Product technology

- ☐ Keeping track of high-PRI signals (Nov, 207)

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Satellite communications



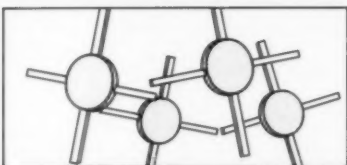
News and analysis

- ☐ Switchboards in the sky (Jun, 35)
- ☐ GPS takes the train (Jun, 47)
- ☐ Telemetry ranges fear greater satellite power (Jul, 51)
- ☐ Very small terminals mean very big business (Nov, 34)
- ☐ Digital voice rides micrometeor trails (Nov, 39)

Design and applications

- ☐ Satcom antennas feature east / west beam shaping (Feb, 75)
- ☐ Model verifies design of mobile data modem (Feb, 81)
- ☐ Heading for space: C-band phased array (Apr, 103)

Semiconductors



News and analysis

- ☐ Innovations improving small-signal devices (May, 78)

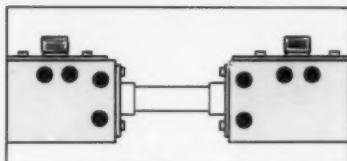
Design and applications

- ☐ Quantum-well devices will challenge HEMTs (Jul, 93)
- ☐ Avalanche diode offers multiplier alternative (Jan, 95)
- ☐ Precise technique finds FET thermal resistance (Aug, 85)
- ☐ Get the best match from ring-quad diodes (Aug, 99)
- ☐ Cut limiter diode loss with improved equation (Sep, 129)
- ☐ Minimize IM distortion in GaAs FET amplifiers (Oct, 107)
- ☐ Rid noise from tests of unstable transistors (Oct, 113)

Product technology

- ☐ Dual-gate GaAs FET passes 18-GHz mark (Feb, 149)
- ☐ Beam-lead varactors provide mm-wave tuning (Mar, 175)
- ☐ InP Gunns power mm-wave sources (Apr, 137)
- ☐ Bipolars fare well in silicon MMICs (May, 227)
- ☐ Dual-gate GaAs FETs power UHF circuits (Jun, 179)
- ☐ Power GaAs FETs boost C-band signals (Aug, 137)
- ☐ Dual-gate GaAs FET drives 18-GHz amps (Sep, 169)
- ☐ HEMT reaches 20 GHz with quiet gain (Sep, 185)
- ☐ InP diodes deliver 34 mW at 94 GHz (Sep, 203)
- ☐ Vitesse shows first GaAs microprocessors (Oct, 129)
- ☐ Surface-mounting boosts noise-source performance (Oct, 133)
- ☐ The ever-improving efficiency of InP devices (Jan, 241)
- ☐ Heat relief for power devices (Apr, 163)

Systems and subsystems



News and analysis

- ☐ The cleanest cut of all (Nov, 45)

Design and applications

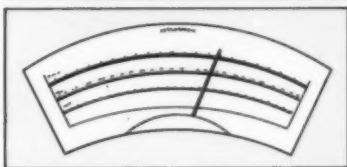
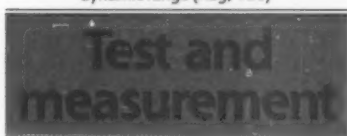
- ☐ Use delay-line circuit for efficient IFMs (Oct, 95)
- ☐ Digital transmitter: Simple, yet precise (Dec, 73)

Product technology

- ☐ Synthesizer combines PLL and digital techniques (Feb, 153)
- ☐ Synthesizer combines speed and accuracy (Jan, 229)
- ☐ Digital words instruct 26-GHz SSB modulator (May, 211)
- ☐ Surveillance receiver spans VHF to 40 GHz (Jun, 121)
- ☐ 3-MHz synthesizer: fast and clean (Jun, 183)
- ☐ GaAs MMIC subsystems downconvert 8-GHz signals (Jul, 131)
- ☐ RF vector modulator tunes gain and phase (Jul, 141)
- ☐ Surveillance receiver spans VHF to 40 GHz (Jan, 173)
- ☐ Microwave mixer family converts 1 to 18 GHz (Oct, 209)
- ☐ FET ring demodulator delivers wide range (Oct, 215)
- ☐ Automating VHF/UHF receiver systems (Feb, 175)
- ☐ Shooting down mixer spurs (Mar, 213)

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- ☐ A modular approach to receiver design (Jun, 235)
- ☐ An alternative mixer for high dynamic range (Aug, 150)



News and analysis

- ☐ Evaluating GaAs IC test techniques (Mar, 85)
- ☐ Microwave instrumentation at the crossroads (Aug, 36)
- ☐ CW and pulsed counters aim at higher frequencies (May, 104)

Design and applications

- ☐ Microwave generators simplify swept tests (Jan, 125)
- ☐ Simple test technique plots device behavior (Mar, 135)
- ☐ Calibrate RF power meters with a thermal converter (May, 173)
- ☐ Test technique improves coax-to-microstrip transitions (Jul, 99)
- ☐ Sharpen pulse measurement accuracy (Aug, 81)
- ☐ Reap unseen benefits from NAVSTAR-GPS (Nov, 113)
- ☐ IMD: Still unclear after all these years (Nov, 119)
- ☐ Modification hikes RF probe to UHF (Mar, 143)
- ☐ Control and automate PLL phase-detector gain (Aug, 103)
- ☐ "Dirty" signal sources muddy receiver analysis (Dec, 83)
- ☐ Guidelines for receiver analysis

(Dec, 113)

Product technology

- ☐ Portable RF SNAs contain sweepers (Jan, 132)
- ☐ RF engineers get a vector analyzer (Jan, 117)
- ☐ Spectrum analyzer improves with age (Jan, 153)
- ☐ GaAs IC complements budget 3-GHz counter (Jan, 221)
- ☐ Transmission-line analyzer checks faults (Jan, 230)
- ☐ Compact instrument counts to 12 GHz (Jan, 230)
- ☐ RF synthesizer system tailors waveforms (Feb, 129)
- ☐ Signal generator makes clean sweeps to 20 GHz (Feb, 143)
- ☐ Pulse generator races to 4 GHz (Mar, 155)
- ☐ Instrument cables maintain stability (Mar, 161)
- ☐ Analyzer measures phase, amplitude, and impedance (Mar, 163)
- ☐ Spectrum analyzers specified for labs (Apr, 141)
- ☐ Signal generator sweeps to 170 GHz (Apr, 147)
- ☐ Network analyzer set scans 40 to 60 GHz (Apr, 147)
- ☐ Storage scope grabs speedy waveforms (Apr, 147)
- ☐ Single YIG drives mono-band generators (May, 209)
- ☐ Low-cost generator is resolutely accurate (May, 217)
- ☐ Portable analyzers serve RF testers (Jun, 195)
- ☐ High-speed "camera" digitizes analog scopes (Jul, 145)
- ☐ Stereo microscope focuses SNA system (Jul, 145)
- ☐ Low-cost instruments count to 26.5 GHz (Aug, 117)
- ☐ Spectrum analyzers span RF to mm-waves (Aug, 131)
- ☐ Frequency synthesizer ranges from 2.0 to 18.6 GHz (Aug, 137)

- ☐ Signal synthesizers sweep to 26 GHz (Sep, 183)
- ☐ Single-band sweepers track 10 MHz to 26.5 GHz (Sep, 187)
- ☐ Modulation enhances synthesized sweepers (Sep, 201)
- ☐ YIG oscillator drives sweeper (Sep, 206)
- ☐ Improvements enhance CW counter series (Sep, 206)
- ☐ Cryogenic probe tests semiconductors (Oct, 214)
- ☐ Pulse-pattern generator clocks 59 MHz to 5 GHz (Nov, 149)
- ☐ Test set simplifies phase measurements (Nov, 155)
- ☐ Portable analyzer scrutinizes 1.5 GHz (Nov, 181)
- ☐ RF synthesizer low on phase noise (Nov, 187)
- ☐ GURU-driven IBM PC controls oscilloscope (Jan, 141)
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- ☐ Software facilitates phase noise characterization (Jul, 166)
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- ☐ Understanding digital storage oscilloscopes (Sep, 234)
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